

## Training and Evaluation Outline Report

**Task Number:** 05-3-5301

**Task Title:** Construct Pipeline Suspension Supports

**Supporting Reference(s):**

Step Number	Reference ID	Reference Name	Required	Primary
	FM 5-19	COMPOSITE RISK MANAGEMENT	Yes	No
	FM 5-482	MILITARY PETROLEUM PIPELINE SYSTEMS	Yes	Yes
	TM 5-302-1	ARMY FACILITIES COMPONENTS SYSTEM: DESIGN (S&I, USAEDH, ATTN: HNDED-FD, HUNTSVILLE, AL 35807-4301)	Yes	No

**Condition:** The element has encountered a gap that lies on the pipe trace. No alternate route is economically feasible for this mission. The element must construct a suspension bridge to breach this gap. The area has been secured and the pipeline must cross this gap. The width and critical dimensions of this gap have been determined. A suspension bridge kit, tools, and all components necessary to deploy this bridge are available. Some iterations of this task should be performed in MOPP.

**Standard:** Construct a pipeline suspension bridge according to detailed instructions to facilitate and support the traversing of the pipeline. The time required to perform this task is increased when conducting it in mission-oriented protective posture (MOPP) 4.

**Special Equipment:** None

### Task Statements

**Cue:** None

**DANGER**

N/A

**WARNING**

N/A

**CAUTION**

None

**Remarks:** None

**Notes:** None

## TASK STEPS

- \* 1. The element leader issues the construction order to the crew leader.
- \* 2. The crew leader selects the proper kit needed for particular employment.
  - a. Reviews critical data outlining the dimensions of the gap.
  - b. Ensures that the proper suspension bridge kit is loaded for transportation to the site.
  - c. Briefs the crew on the specifics of the task.
  - d. Integrates augmentation support into the elements.
  - e. Coordinates with headquarters (HQ) for heavy equipment support, personnel, and special equipment.
- 3. The crew prepares the site for suspension bridge installation.
  - a. Uses survey equipment to establish the surrounding elevations and variations thereof.
  - b. Establishes the high and low sides of the gap from the survey data.
  - c. Selects the best location for installation based on elevation data for tower installation.
  - d. Deploys heavy earthmoving (EM) equipment to establish the final elevation and compaction requirements, as needed.
- 4. The crew installs the main support tower bases.
  - a. Uses a lifting device to temporarily set and support the towers into position.
  - b. Checks tower height for any variations or differences.
    - Note: If differences exist, then move the tower base and make necessary grade adjustments.
  - c. Permanently stakes down the tower base, once the true height is established.
- 5. The crew prepares the tower for erection.
  - a. Assembles the high-side tower using equipment provided in the kit and tools obtained from the unit.
  - b. Assembles the low-side tower. (Made the necessary adjustments according to procedures outlined in appropriate technical manual)
  - c. Attaches four guy wires to the towers before lifting them.
  - d. Uses a lifting device to stand the towers onto the base.
- 6. The crew installs the deadman anchor system.
  - a. Measures and marks the set-back distance where the anchors are to be positioned.
    - Note: This distance is two times the height of the tower plus 4 feet.
  - b. Installs the deadman anchor system (surface-laid or buried).

7. The crew prepares the main cable, suspender, and crossbearer for installation.

- a. Unrolls coiled cable from shipping reels.
- b. Ensures that cables are laid out straight.
- c. Marks the cable at locations where suspenders will be positioned.
- d. Attaches suspenders and crossbearers to the cable in the proper position.
- e. Pulls the cable system across the gap.
- f. Lifts and set both cables onto tower caps.

8. The crew installs staging boards.

- a. Lays out a tag line across the bridge.
- b. Places a 9-foot staging board on each side of the bridge on opposite ends.
- c. Pulls connected staging boards across the bridge using a tag line.

9. The crew makes final assemblies to complete the bridge installation process.

- a. Installs two tension cables at the prescribed locations.
- b. Installs four wind guy assemblies from the bridge to the ground.
- c. Installs hand ropes.
- d. Installs pipeline straps.

e. Rigs crossbearers to afford pipeline security.

Note: Thread one end of a .25-inch wire rope through eyebolts and fasten the other end to a U-bolt clamp.

10. The crew inspects the bridge for final adjustments.

- a. Checks the tension on main cables, cross braces, and all guy lines by vigorously jerking on them.
- b. Checks the base of the towers for steadiness and sturdiness.
- c. Welds at the specified attachments points.

\* 11. The element leader reports the status to higher HQ.

(Asterisks indicates a leader performance step.)

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. The element leader issued construction order.			
2. The crew leader selected the proper kit and coordinated equipment support.			
3. The crew prepared the site for installation of the suspension bridge.			
4. The crew installed the main support tower bases.			
5. The crew prepared the tower for erection.			
6. The crew installed a deadman anchor system.			
7. The crew prepared the main cable, suspender, and crossbearer for installation.			
8. The crew installed staging boards.			
9. The crew made final assemblies to complete the bridge installation.			
10. The crew inspected the bridge for final adjustments.			
11. The element leader reported the status to higher HQ.			

TASK PERFORMANCE / EVALUATION SUMMARY BLOCK							
ITERATION	1	2	3	4	5	M	TOTAL
TOTAL PERFORMANCE MEASURES EVALUATED							
TOTAL PERFORMANCE MEASURES GO							
TRAINING STATUS GO/NO-GO							

ITERATION: 1 2 3 4 5 M

COMMANDER/LEADER ASSESSMENT: T P U

Mission(s) supported: None

MOPP: Sometimes

MOPP Statement: None

NVG: Never

NVG Statement: None

Prerequisite Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	05-2-0017	Plan for Engineer Augmentation Support	05 - Engineers (Collective)	Approved
	05-2-7008	Prepare an Operation Order (OPORD) (Company/Platoon)	05 - Engineers (Collective)	Approved

Supporting Collective Task(s):

Step Number	Task Number	Title	Proponent	Status
	05-2-0018	Conduct Report Procedures	05 - Engineers (Collective)	Approved

Supporting Individual Task(s):

Step Number	Task Number	Title	Proponent	Status
	052-210-1005	Manage Projects Using TCMS and MS Project	052 - Engineer (Individual)	Approved
	052-210-1026	Design a Utilities Job Plan	052 - Engineer (Individual)	Approved
	052-239-3001	Prepare a Bill of Materials	052 - Engineer (Individual)	Approved
	052-239-3029	Schedule Work	052 - Engineer (Individual)	Approved
	052-239-3030	Read Construction Prints	052 - Engineer (Individual)	Approved
	052-239-3030	Read Construction Prints (DRAFT)	052 - Engineer (Individual)	Analysis
	052-239-3036	Supervise the Installation of Pipelines	052 - Engineer (Individual)	Approved
	052-243-3029	Design Concrete Mix	052 - Engineer (Individual)	Approved
	052-248-1013	Install a Coupled Pipeline	052 - Engineer (Individual)	Approved
	052-248-1040	Interpret Plumbing Prints and Drawings	052 - Engineer (Individual)	Approved

**Supporting Drill Task(s):** None

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**TADSS**

Step ID	TADSS ID	Title	Product Type	Quantity
No TADSS specified				

**Equipment (LIN)**

Step ID	LIN	Nomenclature	Qty
	W48759	Tool Kit, Pipe Fitter, Supplementary, 2-1/2" to 4"	1
	W94536	Trailer Bolster: General Purpose 4 Ton 4 Wheel W/E	1
	C05002	Computer System Digital: AN/PYQ-10(C)	1
	W48348	Tool Kit Pioneer Engineer Squad: Land CLR and BLDG Erection	1
	W48622	Tool Kit, Pipe Fitter GN	1
	T60081	TR C 2 1/2T M1078	1
	T73347	Truck Lift Fork Variable Reach Rough Terrain	1

**Materiel Items (NSN)**

Step ID	NSN	LIN	Title	Qty
No equipment specified				

**Environment:** Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination.